AMENDMENTS TO THE CLAIMS

The text of all pending claims, including withdrawn claims, is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claims 63 and 65 and CANCEL claims 25-47 and 64 in accordance with the following:

1-62. (Cancelled)

63. (Currently Amended) An apparatus for detecting the heart rate of a fetus, the apparatus comprising:

~~A~~at least two detector~~s~~ to detect heart beats of the fetus, ~~the~~each detector including at least two electrodes, adapted to be placed on ~~the~~an abdomen of ~~the~~a mother of the fetus, ~~for detecting~~configured to detect ECG signals; and

a processor, coupled to the detector~~s~~, adapted to determine ~~the~~a heart rate of the fetus by only processing the ECG signals received from the at least two electrodes of each detector, the processor including

means for detecting heart beats of the mother by determining when the ECG signals reach a maximum, and

means for determining ~~the~~a heart rate of the mother by determining ~~the~~a time interval between adjacent heart beats, so as to determine the heart rate of the mother using only the processed ECG signals~~; and~~,

~~at least two detectors to detect heart beats of the fetus, each detector including at least two electrodes to detect ECG signals, the detectors being positioned on the abdomen of the mother in use, and the processor being adapted to process the ECG signals received from each detector and determine the heart rate of the fetus,~~

wherein the processor generates virtual ECG signals as a weighted sum of the ECG signals detected by the detectors, the virtual ECG signals representing the ECG signals that would have been obtained from a virtual detector positioned at a virtual location on the abdomen of the mother.

64. (Cancelled)

65. (Currently Amended) An apparatus for detecting the heart rate of a fetus, the apparatus comprising:

a detector to detect heart beats of the fetus, the detector including at least two electrodes, adapted to be placed on ~~the~~an abdomen of ~~the~~a mother of the fetus, ~~for detecting~~configured to detect ECG signals; and

a processor, coupled to the detector, adapted to determine ~~the~~a heart rate of the fetus by only processing the ECG signals received from the at least two electrodes, the processor including

means for detecting heart beats of the mother by determining when the ECG signals reach a maximum, and

means for determining ~~the~~a heart rate of the mother by determining ~~the~~a time interval between adjacent heart beats, so as to determine the heart rate of the mother using only the processed ECG signals,

wherein the processor is adapted to determine the standard deviation of each time interval between the heart beats detected, and select the time intervals having a standard deviation lower than a predetermined value, so as to determine the heart rate in accordance with the time interval between adjacent heart beats.

66. (Previously Presented) An apparatus according to claim 65, wherein the predetermined value is approximately 7 ms for four consecutive time intervals.

67. (Previously Presented) An apparatus according to claim 65, wherein the processor is adapted to

designate time intervals not selected to be erroneous time intervals; and

modify the erroneous time intervals in accordance with the selected time intervals.

68. (Previously Presented) An apparatus according to claim 67, wherein to modify the time intervals comprises:

comparing the erroneous time interval to the selected time intervals;

determining the number of errors within the erroneous time interval;

identifying possible fetal heart beats within the erroneous time intervals; and

determining the true fetal heart beat from the possible fetal heart beats, based upon the signature of the fetal heart beat.

69. (Previously Presented) An apparatus according to claim 68, the processor being further adapted to average the time intervals and the corrected time intervals to determine a heart rate.